

IN THE SPECIFICATION

Please replace paragraph [0009] with the following paragraph:

[0009] One solution that has been recognized for improving the quality of the speech coding systems is described in U.S. patent application serial no. 09/800,071, entitled “Joint Optimization of Excitation and Model Parameters in Parametric Speech Coders,” filed March 6, [[2000]] 2001 to Lashkari et al., hereby incorporated by reference. Briefly stated, this solution involves minimizing a synthesis error between an original speech sample and a synthesized speech sample. One difficulty that was discovered in certain speech coding systems, however, is the highly nonlinear nature of the synthesis error, which made the problem mathematically ill behaved. This difficulty was overcome by solving the problem using the roots of the synthesis filter polynomial instead of coefficients of the polynomial. Accordingly, a root optimization algorithm is described therein for finding the roots of the synthesis filter polynomial.

Please replace paragraph [0083] with the following paragraph:

[0083] Figure 5 shows a spectral chart of the original speech, the CELP synthesized speech and the optimally synthesized speech. The first spectral peak of the original speech can be seen in this chart at a frequency of about 280 Hz. Accordingly, the spectrum of optimized synthesized speech waveform matches the [[16000]] 1600 Hz component of the original speech much better than the spectrum of the LPC synthesized speech waveform.

Please replace paragraph [00118] with the following paragraph:

[00118] At processing block 856, processing logic computes the first (LPC) LSPs. Next, processing logic optimizes the LSPs with an iterative gradient descent algorithm using formulas (38c), (38d), (37c), (37d), (35b), (35c), (26a), (26b) and (25a) described above (processing block [[856]] 858).